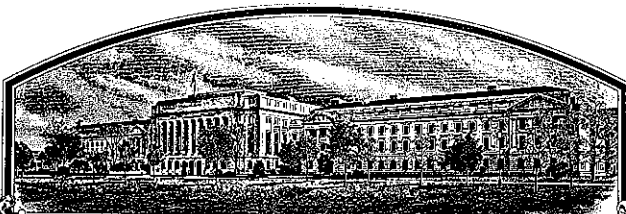


No.



9600331

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ALFALFA

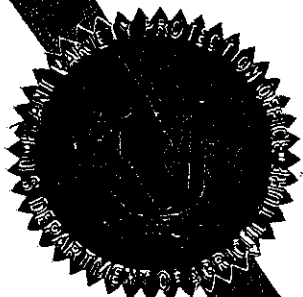
'Superba'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of June in the year of our Lord one thousand nine hundred and ninety-nine.

Attest:

Acting Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture




U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Pioneer Hi-Bred International, Inc.		XAI32	Superba
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER 9600331 DATE August 13, 1996 FILING AND EXAMINATION FEE: \$ 2450.00 DATE August 13, 1996 CERTIFICATION FEE: \$ 380.00 DATE 3/1/99
7305 N.W. 62nd Ave. P.O. Box 287 Johnston, IA 50131		(515) 270-3340	
6. FAX (include area code)			
(515) 270-3750			
7. GENUS AND SPECIES NAME	8. FAMILY NAME (Botanical)		
Medicago sativa	Leguminosae		
9. CROP KIND NAME (Common name)			
Alfalfa			
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)			
Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
Iowa		May 6, 1926	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			14. TELEPHONE (include area code)
<del>William T. W. Woodward</del> Mary Letsch 7305 N.W. 62nd Ave. P.O. Box 287 Johnston, IA 50131 AAA 15 Jun 1999 (per email)			(515) 270-3340
Debra Blair 700 Capital Square 400 Locust Des Moines, IA 50309			15. FAX (include area code)
			(515) 270-3750
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2450), made payable to "Treasurer of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)			
<input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<input checked="" type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?			
<input checked="" type="checkbox"/> YES (If "yes," give names of countries and dates) <input type="checkbox"/> NO         Italy, Spring of 1996			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE OF APPLICANT (Owner(s))	
			
NAME (Please print or type)		NAME (Please print or type)	
William T.W. Woodward			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Director, Department of Alfalfa Research	9/12/96		

## **Exhibit A**

### **Origin and Breeding History of the Variety**

#### **`Superba`**

Superba is a synthetic variety comprised from 105 parental plants originating from nine Pioneer experimental lines tracing to the varieties Caliverde (22%), Lahontan(10%), 572(7%), Washoe(7 %), Amador(6%), Florida77(5%), CUF101(5%), 581(3%), 5929(2%), WL512(2%), Moapa69(2%), El Camino(2%). It also traces back to known and unknown varieties with smaller contributions such as Condura(1.5%), N71(1.1%), WL450 (1.0%), DK167(0.5%), Nev. SynXX (0.5%), Sonora (0.1%), UC Salton(0.1%). Seed was harvested from individual plants in 1992 in cage isolation and bulked to produce Syn 1 breeder seed. Parent plants were selected through phenotypic recurrent selection for anthracnose.

During seed multiplication, no variation beyond the limits defined under exhibit C have been found. Multiplication procedures will insure that seed being sold as Superba will not be shifted in characteristics beyond presently acceptable limits for alfalfa varieties.

It is confirmed that Superba meets presently acceptable levels for uniformity for alfalfa varieties.

#### **Note to the examiner :**

DK167 and N71 Brand are referenced in the publication Miller D. & Melton B. 1983.

Description of Alfalfa Cultivars and Germplasm Sources. New Mexico State University Special Report 53 pp. 102 and pp. 162 respectively.

## **Exhibit B**

### **Novelty Statement**

Superba most important novelty characteristic is not to have high resistance to one specific disease trait but instead to have the desired combination of traits for the growing conditions of the Po river valley of Italy. Its superior productivity and persistence is an asset to the Italian farmers.

Superba most closely resembles the variety 'Maricopa'. But Superba differs from Maricopa for its Spotted alfalfa aphid resistance. In a Kerman, CA spotted alfalfa aphid resistance evaluation test Maricopa had 66.2% resistant plants while the resistant check Baker was rated at 56.4% and the susceptible (Arc) had 1.3% resistant plants. Superba as presented, has 37.2% resistant plants to this aphid.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK AND SEED DIVISION  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MARYLAND 20705

EXHIBIT C  
(ALFALFA)

OBJECTIVE DESCRIPTION OF VARIETY  
ALFALFA (*Medicago sativa* sensu Gunn et al.)

NAME OF APPLICANT(S) Pioneer Hi-Bred International, Inc.	TEMPORARY DESIGNATION XAI32	VARIETY NAME Superba
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 7305 N.W. 62nd Ave., P.O. Box 287 Johnston, IA 50131		FOR OFFICIAL USE ONLY PVPO NUMBER

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place numbers in the boxes to designate the expressions which are characteristic of the commercial generations of the application variety. Data for quantitative plant characters should be based on a minimum of 100 plants. Include leading zeros when necessary (e.g. 0 8 9) for quantitative data. Comparative data should be determined from varieties entered in the same trial. Plant color may be precisely designated by using any recognized color chart e.g., The Munsell Plant Tissue Color Charts.

## 1. WINTERHARDINESS:

☐

CLASS:

1 = Very Non-Winterhardy (CUF 101)  
3 = Intermediately Non-Winterhardy (Mesilla)  
5 = (Du Puits)  
7 = (Ranger)  
9 = Extremely Winterhardy (Norseman)

2 = Non-Winterhardy (Moapa 69)  
4 = Semi-Winterhardy (Lahontan)  
6 = Moderately Winterhardy (Saranac)  
8 = Winterhardy (Vernal)

TEST LOCATION: \_\_\_\_\_

## 2. FALL DORMANCY:

## FALL DORMANCY (DETERMINED FROM SPACED PLANTINGS)

TESTING INSTITUTION AND LOCATION	DATE OF LAST CUT	DATE REGROWTH SCORED	REGROWTH SCORE OR AVERAGE HEIGHT				LSD .05
			APPLICATION VARIETY	CHECK VARIETIES*			
				Meteor	Sutter	5715	
Pioneer Hi-Bred International, Inc., Arlington, WI	9/95	9/95	29.1	22.2	29.8	35.0	2.6

\* CUF 101, Moapa 69, Mesilla, Lahontan, Du Puits, Saranac, Ranger, Vernal, or Norseman as appropriate.

Specify scoring system used: Natural plant height in cm☐

Fall Growth Habit (Determined from Fall Dormancy Trials)

1 = Erect (CUF 101)  
7 = Semidecumbent (Vernal)

3 = Semierect (Mesilla)  
9 = Decumbent (Norseman)

## 3. RECOVERY AFTER FIRST SPRING CUT (In Southwest, first cut after March 21):

☐

1 = Very Fast (CUF 101)  
9 = Very Slow (Norseman)

3 = Fast (Saranac)

5 = Intermediate (Ranger)

7 = Slow (Vernal)

TEST LOCATION: Leno, Italy

## 4. AREAS OF ADAPTATION IN U.S. (Where tested and proven adapted):

☐

Primary Area of Adaptation

☐☐

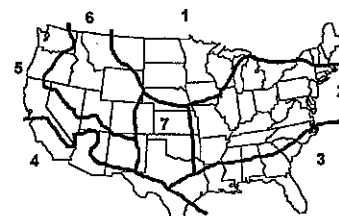
Other Areas of Adaptation

1 = North Central  
5 = Moderately Winterhardy Intermountain  
8 = Other (Specify) Po Valley of Italy

2 = East Central

3 = Southeast  
6 = Winterhardy Intermountain

4 = Southwest  
7 = Great Plains



## 5. FLOWERING DATE (When 10% of plants possess open flowers at time of first spring cut):

<input type="checkbox"/>	Days Earlier Than	<input type="checkbox"/>
<input type="checkbox"/>	Same As	<input type="checkbox"/>
<input type="checkbox"/>	Days Later Than	<input type="checkbox"/>

1 = CUF 101

2 = Mesilla

3 = Saranac

4 = Vernal

5 = Norseman

TEST LOCATION: \_\_\_\_\_

## 6. PLANT COLOR (Determined from healthy regrowth 3 weeks after first spring cut, controlling leafhoppers if necessary):

☐

1 = Very Dark Green (524)

2 = Dark Green (Vernal)

3 = Light Green (Ranger)

COLOR CHART VALUE (Specify chart used) \_\_\_\_\_

APPLICATION VARIETY: \_\_\_\_\_

VERNAL: \_\_\_\_\_

TEST LOCATION: \_\_\_\_\_

## 7. CROWN TYPE (Determined from spaced plantings):

☐

Noncreeping Types:

1 = Broad (Vernal)

2 = Intermediate (Saranac)

3 = Narrow (CUF 101)

Creeping Types:

4 = Creeping Rooted (Rangelander)

5 = Rhizomatous (Rhizoma)

## 8. FLOWER COLOR (Determine frequency of plants for each color class as defined by USDA Agricultural Handbook No. 424 (Barnes 1972), allowing all plants in plot to flower):

☐

% Purple and Violet (Subclasses 1.1 to 1.4)

☐

% Blue (Subclasses 2.3 and 2.4)

☐

% Variegated Other Than Blue (Subclasses 2.1, 2.2, 2.5 to 2.9)

☐

% Yellow (Subclasses 4.1 to 4.4)

☐

% Cream (Class 3)

☐

% White (Class 5)

TEST LOCATION: Johnston, IA

## 9. POD SHAPE (Determine frequency of plants with the following pod shapes produced on well cross-pollinated racemes):

☐

% Tightly Coiled (One or more coils, center more or less closed)

☐

% Loosely Coiled (One or more coils, center conspicuously open)

☐

% Sickle (Less than 1 coil)

TEST LOCATION: \_\_\_\_\_

10. PEST RESISTANCE: Provide in the appropriate column, trial data for application variety, and resistant (R) and susceptible (S) check varieties, synthetic generation tested, average severity index scores (ASI), least significant difference statistics (LSD .05), the institution in charge of test, year, and location of test, and whether test is a field or laboratory evaluation. Describe scoring system, and any test procedure which differs from standard methods proposed by Elgin (1982). Trial data from other test years or locations should be presented whenever available on a separate document as Exhibit D.

Seeds of the check varieties and germplasm lines listed below can be obtained from the USDA Field Crops Laboratory, Bldg. 001, Rm. 335, BARC-West, Beltsville, MD 20705. Although comparisons with check varieties listed below are preferred, comparisons with any appropriate check variety recommended by Elgin (1982) may be presented.

A. DISEASE RESISTANCE:							
DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Anthracnose, Race 1 ( <i>Colletotrichum trifolii</i> )	Application R	1	35.7	~300		% Resistant plants	Pioneer Hi-Bred International, Inc., 1993, Arlington, WI, Laboratory (greenhouse)
	Arc (R)		65.0	~300		11.9	
	Saranac (S)		0.9	~300			
	SCORING SYSTEM: Standard test						
Anthracnose, Race 2 ( <i>Colletotrichum trifolii</i> )	Application						
	Saranac AR (R)						
	Arc (S)						
	SCORING SYSTEM:						
Bacterial Wilt ( <i>Corynebacterium insidiosum</i> )	Application MR	1	23.5	~200		% Resistant plants	Pioneer Hi-Bred International, Inc., 1994, Arlington, WI, field
	Vernal (R)		42.0	~200		16.6	
	Narragansett (S)		4.0	~200			
	SCORING SYSTEM: Standard test						
Common Leafspot ( <i>Pseudopeziza medicaginis</i> )	Application						
	MSA-CW3An3 (R)						
	Ranger (S)						
	SCORING SYSTEM:						

## 10. A. PEST RESISTANCE (Continued):

DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Downy Mildew ( <i>Peronospora trifoliorum</i> )	Application						
Isolate, if known:	Saranac (R)						
	Kanza (S)						
	SCORING SYSTEM:						
Fusarium Wilt ( <i>Fusarium oxysporum f. medicaginis</i> )	Application HR	1	58.8	~200		% Resistant plants	Pioneer Hi-Bred International, Inc., 1994, Quarryville, PA, Field
	Moapa 69 (R) Agate (HR)		54.0	~200		18.2	
	Narragansett (S) MNGN-1 (S)		5.6	~200			
	SCORING SYSTEM: Standard test						
Phytophthora Root Rot ( <i>Phytophthora megasperma f. medicaginis</i> )	Application R	1	36.1	~300		% Resistant plants	Pioneer Hi-Bred International, Inc., 1992, Arlington, WI, Laboratory (greenhouse)
	Agate (R)		33.0	~300		15.3	
	Saranac (S)		1.0	~300			
	SCORING SYSTEM: Standard test						
Verticillium Wilt ( <i>Verticillium albo-atrum</i> )	Application MR	1	22.8	~200		% Resistant plants	Pioneer Hi-Bred International, Inc., 1994, Arlington, WI, Laboratory (greenhouse)
	Vertus (R) Oneida VR (HR)		60.0	~200		12.6	
	Saranac (S)		2.3	~200			
	SCORING SYSTEM: Standard test						
Other (Specify)	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						
Other (Specify)	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

## B. INSECT RESISTANCE:

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT DEFOLIATION	DEFOLIATION IN PERCENT OF RESISTANT CHECK	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Alfalfa Weevil ( <i>Hypera postica</i> )	Application						
	Arc (R)			100			
	Saranac (S)						
	SCORING SYSTEM:						

## 10. B. INSECT RESISTANCE (Continued):

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT SEEDLING SURVIVAL	NUMBER OF SEEDLINGS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY	
Blue Alfalfa Aphid ( <i>Acyrtosiphon kondoi</i> )	Application							
	CUF 101 (R)							
	PA-1 (S)							
	SCORING SYSTEM:							
Pea Aphid ( <i>Acyrtosiphon pisum</i> )	Application							
	Kanza (R)							
	Ranger (S)							
	SCORING SYSTEM:							
Spotted Alfalfa Aphid ( <i>Therioaphis maculata</i> ) Biotype, if known:	Application R	1	37.2	~300		% Resistant plants	Pioneer Hi-Bred International, Inc., 1994, Fresno, CA, Laboratory (greenhouse)	
	Kanza (R) Baker (R)		50.0	~300		13.0		
	Ranger (S) Arc (S)		2.2	~300				
	SCORING SYSTEM: Standard test							
INSECT	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY	
Potato Leafhopper Yellowing ( <i>Empoasca fabae</i> )	Application							
	MSA-CW3An3 (R)							
	Ranger (S)							
	SCORING SYSTEM:							
Other (Specify)	Application							
	(R)							
	(S)							
	SCORING SYSTEM:							
C. NEMATODE RESISTANCE:	NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Northern Root Knot ( <i>Meloidogyne hapla</i> )	Application							
	Nev.Syn.XX							
	Lahontan (S)							
	SCORING SYSTEM:							

## 10. C. NEMATODE RESISTANCE (Continued):

NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Southern Root Knot ( <i>Meloidogyne incognita</i> )	Application						
	Moapa 69 (R)						
	Lahontan (S)						
	SCORING SYSTEM:						
Stem Nematode ( <i>Ditylenchus dipsaci</i> )	Application R	1	47.4	~300		% Resistant plants 18.0	Pioneer Hi-Bred International, Inc., 1994, Connell, WA, Laboratory (growth room)
	Lahontan (R) Vernema (HR)		60.0	~300			
	Ranger (S)		8.3	~300			
	SCORING SYSTEM: Standard test						
Other (Specify)	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

## 11. INDICATE THE VARIETY THAT MOST CLOSELY RESEMBLES THE APPLICATION VARIETY FOR EACH OF THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
Winterhardiness	Sutter	Plant Color	-
Recovery After 1st Cut	Sutter	Crown Type	Mesilla
Area of Adaptation	Delta	Combined Disease Resistance	Maricopa
Flowering Date	-	Combined Insect Resistance	Maricopa

## REFERENCES

Barnes, D.K. 1972. A System for Visually Classifying Alfalfa Flower Color. U.S. Dep. Agric. Handb. 424. 18 pp. (Note: Greenish cast of plate 6, A and B is an artifact of printing, actual colors a blend of yellow and white.)

Elgin, J.H., Jr., (ed.). 1982. Standard Tests to Characterize Pest Resistance in Alfalfa Cultivars. U.S. Dep. Agric. Tech. Bull. (In Press).

Gunn, C.R., W.H. Skrdla, and H.C. Spencer. 1978. Classification of *Medicago sativa* L. using legume characters and flower colors. U.S. Dep. Agric. Tech. Bull. 1574. 84 pp.

Munsell Color Co. 1977. Munsell Plant Tissue Color Charts. Munsell Color Co., Inc. Baltimore.

NOTE: Any additional descriptive information and supporting documentation may be provided as Exhibit D.

## EXHIBIT D

**Superba**

1. Superba is a synthetic variety with 105 parental plants which trace through 9 Pioneer experimental lines to Caliverde, Lahontan, 572, Washoe, Amador, Florida 77, CUF101, 581, 5929, WL512, Moapa 69, El Camino, with smaller contribution from DK167, WL450, N71 Brand and others with minor contributions. Parent plants were selected through phenotypic recurrent selection for resistance to anthracnose. Germplasm sources are Ladak (t), *M. varia* (t), Turkistan (33%), Chilean (19%), Indian (3%), African (13%) and unknown (32%).
2. Superba is intended for use in the Po valley and central areas of Italy and in Greece. It has been tested for yield in Italy.
3. Superba is a nondormant cultivar with a fall dormancy similar to Sutter. Flower color in the Syn 1 generation is approximately 97% purple and 3% variegated, with traces of yellow, white and cream.
4. Superba has high resistance to Fusarium wilt; resistance to anthracnose (race 1), Phytophthora root rot, stem nematode and spotted alfalfa aphid; moderate resistance to bacterial wilt and Verticillium wilt; susceptible to Aphanomyces root rot (race 1). Superba has not been tested for pea aphid, blue alfalfa aphid or root knot nematode.
5. Breeder seed (Syn 1) was produced in 1992 on parent plants in "cage isolation" and bulked. Seed classes will be breeder, foundation (Syn 2 or Syn 3) and certified (Syn 2, Syn 3 or Syn 4). Foundation seed may be produced from breeder or foundation. The second generation foundation (Syn 3) may be produced at the discretion of Pioneer Hi-Bred International, Inc. Limitations on age of stand will be three years and five years, respectively, for foundation seed and certified seed. Sufficient breeder and/or foundation seed for the projected life of the variety will be maintained by Pioneer Hi-Bred International, Inc.
6. Seed will be marketed in the spring of 1996 in Italy.
7. Application for Plant Variety Protection will be made, and the certification option will not be requested.
8. As a means of added varietal protection, information included with the Application for Review of Alfalfa Varieties for Certification may be provided to the PVP office.
9. Variety name: **Superba** Date submitted: **November 30, 1995**  
Experimental designations: **XAI32, ZAI32**

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)  Pioneer Hi-Bred International, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER  XAI32	3. VARIETY NAME  SUPERBA
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)  7305 N.W. 62nd Ave. P.O. Box 287 Johnston, IA 50131	5. TELEPHONE (include area code)  (515) 270-3340	6. FAX (include area code)  (515) 270-3750
7. PVPO NUMBER  9600331		

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.

☒ YES ☐ NO

Pioneer Hi-Bred International, Inc., Des Moines, IA, is the employer of the plant breeders involved in the development and evaluation of

Superba. Pioneer Hi-Bred International, Inc. has the sole rights and ownership of Superba.

9. Is the applicant (individual or company) a U.S. national or U.S. based company?

If no, give name of country \_\_\_\_\_

☒ YES ☐ NO

10. Is the applicant the original breeder? If no, please answer the following:

☒ YES ☐ NO

a. If original rights to variety were owned by individual(s):

Is (are) the original breeder(s) a U.S. national(s)? If no, give name of country \_\_\_\_\_

☒ YES ☐ NO

b. If original rights to variety were owned by a company:

Is the original breeder(s) U.S. based company? If no, give name of country \_\_\_\_\_

11. Additional explanation on ownership (If needed, use reverse for extra space):

**PLEASE NOTE:**

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeders(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

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